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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/740,737	12/18/2000	Giampiero Maggioni	856063.677	4179

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EXAMINER

GONZALEZ, JULIO C

ART UNIT	PAPER NUMBER
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2834

DATE MAILED: 04/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/740,737

Applicant(s)

MAGGIONI ET AL.

Examiner

Julio C. Gonzalez

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7, 8 and 11-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 5, 7, 8 and 11 is/are rejected.
- 7) ☒ Claim(s) 3, 4, 12 and 13 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 December 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, 7 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable by Maruyama et al in view of Kohl et al, Swanson et al and Microelectronic Circuits book by Sedra/Smith.

Maruyama et al discloses a voltage regulator 3, a control unit 6, a thermal engine 100, an alternator 21 wherein the control unit 6 is connected between the thermal engine 100 and the voltage regulator 3 (see figure 1). Also, the control unit supplies the voltage regulator with a square wave signal (see figures 3, 4C, 4D, 4F).

However, Maruyama et al does not disclose explicitly having a system wherein the engine operation state may be used in controlling a voltage regulation.

On the other hand, Kohl et al discloses for the purpose of enabling the deactivation of the load responses upon rpm reduction with a simple circuit, a

voltage regulator 22, a control unit 26 and wherein the voltage regulation is controlled by using the rpm of the engine (see claim 6).

However, neither Maruyama et al nor Kohl et al disclose explicitly that the signal from the alternator may be sent to a regulator and then to a control unit.

On the other hand, Swanson et al teaches for the purpose of improving over voltage regulation and protection to generators that it is well known in the art to use a phase signal from an alternator 180 and sent that signal to a regulator (see figure 1). Moreover, Swanson discloses that the regulator 150 is able to send a regulated signal 145 to a control unit 130.

However, neither Maruyama nor Kohl et al nor Swanson et al disclose explicitly that the signal from the alternator may be sent to a regulator and a regulated signal may be sent to a control unit. More specifically, Swanson et al does not disclose explicitly that the control unit 130 receives a regulated signal from the voltage regulator 150.

Although it is well know in the art that a phase signal is a sinusoidal signal and once a phase signal has been rectified and pass through a voltage regulator, such signal is not a phase signal, but a constant signal in spite of variations in the ac line voltage and in the current drawn by the load, the Microelectronic Circuits book by Sedra/Smith teaches that a phase signal being passed through a rectifier

and then through a voltage regulator (regulated signal) is no longer a phase signal, but a regulated stable signal (see figure 3.36 in page 179 of the Microelectronic Circuits book).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design a voltage regulating device as disclosed by Maruyama et al and to have the rpm of the engine affect the regulating voltage for the purpose of enabling the deactivation of the load responses upon rpm reduction with a simple circuit as disclosed by Kohl et al and to sent a signal from the alternator through a regulator for the purpose of improving over voltage regulation and protection to generators as disclosed by Swanson et al and to provide a constant signal in spite of variations in the ac line voltage and in the current drawn by the load as taught by the Microelectronic Circuits book by Sedra/Smith.

3. Claims 5 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maruyama et al, Kohl et al, Swanson et al and Microelectronic Circuits book by Sedra/Smith as applied to claims 1 and 2 above, and further in view of Iwatani et al.

The combined voltage regulating device discloses all of the elements above. However, the combined voltage regulating device does not disclose explicitly using sensors.

On the other hand, Iwatani discloses for the purpose of increasing the efficiency of fuel for vehicles and quickly charging the battery, a plurality of switches and buffers been used in a voltage regulator 3A (see figure 1). Also, sensors are used (see figure 1), which are dependent on the state of the engine (column 4, lines 66, 67).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the combined voltage regulating device as disclosed above and to modify the invention by using a plurality of sensors for the purpose of increasing the efficiency of fuel for vehicles and quickly charging the battery as disclosed by Iwatani.

Response to Arguments

10. Applicant's arguments with respect to claims 1-5,7,8 and 11-13 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter


11. Claims 3, 4, 12 and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julio C. Gonzalez whose telephone number is 571-272-2024. The examiner can normally be reached on M-F (8AM-5PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on 571-272-2044. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197).

Jcg


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